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STUDENT

AIRLAND BATTLE EXECUTION--SOME IMPLICATIONS OF DEEP ATTACK

BY

COLONEL WALTER E. OLSON

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MAY 1984



US ARMY WAR COLLEGE, CARLISLE BARRACKS, PERHSYLVANIA

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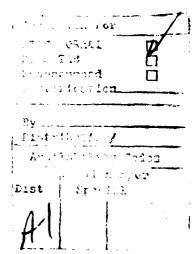
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AirLand Battle Execution -- Some Implications of Deep Attack

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ABSTRACT

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The Army and Air Force have committed to the concept of AirLand Battle. A cornerstone of this new doctrine is the attack of enemy second echelon units deep in his rear. The Department of Defense and Congress have shown interest in pursuing a deep attack strategy and are directing the services to get on with hardware solutions. As of this date, neither service has constructed firm requirements that will cause development programs to begin. The concept of deep attack carries with it major resource and strategy implications. The services must carefully examine the deep attack option and select the best course of action for the future. There exist many constraints which will dictate whether or not deep attack can be translated from doctrine into effective hardware that is appropriate for the AirLand Battle. Until the services complete an in-depth evaluation of both their requirements and these constraints, develop realistic needs and weigh the cost-effectiveness of proposed systems, no commitment to a hardware solution that requires significant investment should be made. It remains to be seen if the services can agree on solutions that will make deep attack a reality.

Since its introduction, the Airland Battle concept has focused on a "Deep Attack" strategy as one of its major cornerstones for success. Deep attack was postulated as a leveraging mechanism intended to overcome an already sizeable and ever-expanding Soviet military threat. The goal of winning the war, not just attempting to sustain a defense with ultimate reliance upon recourse to nuclear weapons, was postulated as being feasible. This was to be accomplished through the coordinated efforts of the individual services through application of a combination of specialized conventional weapons and opportunistic maneuver. The concept was founded upon the ability to take advantage of enemy weaknesses while avoiding his strengths. When force ratios indicate that a defender's combat power is insufficient to execute a sound defense, the least risky alternative may be to attack. The goal, of course, is to destroy or significantly disrupt those forces which are considered critical to the enemy's combat momentum, thus blunting the warfighting potential of the attacking enemy force and providing tactical opportunities for the outnumbered defending force. Whether or not this goal can be achieved through employment of a deep attack strategy and an examination of the feasibility of providing the mechanism required to execute such a strategy is the subject of this essay. The basic issues center around the process of developing the requirement for deep attack, the evaluation of the deep attack system, and the potential for deployment by the services of a deep attack system as it competes within a resource-constrained defense program. Simple affordability comparisons and several other related and important constraints will be addressed as to their affect upon the desired

outcome. Since the focus here is upon systemic deep attack only, no discussion of the maneuver requirements, close-in battle or rear area battle as called for by AirLand doctrine, is provided. Obviously, a thorough evaluation of all of the cornerstones of AirLand Battle doctrine is required to complete the total assessment of our capabilities.

Deep attack strategy is wholly dependent upon the successful application of some very advanced and extremely complex technologies, combined with innovative tactics to counter a threat to NATO that is growing and shows no signs of abating. The question of what to offer in response to this threat has NATO searching for not only a battlefield option that offers hope of military success but also, and perhaps more importantly, a tool that provides deterrence well into the future. Unfortunately, at this point in history, the alliance faces certain economic, political and social constraints that place rather severe bounds on any proposed NATO response. Should a significant conventional counterstrategy to the Warsaw Pact not be forthcoming from NATO, it would appear that more reliance would have to be placed on the nuclear deterrent as the appropriate military response to preclude successful Warsaw Pact military operations. The paradox faced here is that there is a greater reluctance to use nuclear weapons on the continent by the Europeans and that reluctance appears to be growing stronger with the passage of time. All parties to the NATO alliance also face the same budgetary pressures so common to world conditions today. It is clear that there will be no sizable

increases in defense expenditures to pay for an additional conventional option. Also generally accepted is the size of NATO military forces as they stand today. The cost to provide and support any additional military forces will preclude this option for some time to come. Europe, although uncomfortable with the growth in Warsaw Pact capabilities, does not appear ready to pay for any counter-option that makes a substantial claim on their resources. At issue then is how to counter the threat without increasing the likelihood of a nuclear exchange, without calling for significant increases in defense monetary outlays, and without increasing manpower investments for defense. Obviously a NATO response to the growing Warsaw Pact military strength is required, but it appears that the solution will be bounded by economic, political, and social constraints of significant proportions. Herein lie the first of several major constraints impacting the execution of the deep attack. We are beginning to bound potential solutions.

Commitment

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The deep attack premise that supports AirLand Battle is favored in the United States by many, but certainly not all, contemporary military leaders, a handful of congressmen, and selected members of the Department of Defense (DOD). SACEUR, General Bernard Rogers has testified before both houses of Congress on his perceived need for a conventional deep attack system for NATO. Congress, in turn, has shown interest and has directed DOD to study the issue and report back to them on how such a capability would improve our military posture in

Europe. Congress has also shown a proclivity to provide funds to the services in order to get on with this business of deep attack. However, they have also shown an intent to provide strong management in this area through the power of the purse and some very specific congressional language. DOD has gone so far as to establish a permanent Interdiction Executive Board (IEB) to guide and manage what is essentially the acquisition of deep attack weapon systems. The Army has committed itself to the deep attack concept, most recently through publication in 1982 of the revised FM 100-5, Operations. The Air Force has also recently subscribed in principle to the AirLand Battle via a memorandum of understanding with the Army. Now that we are committed to the basic doctrine which calls for deep attack and most players have rallied around their respective campfires, it is time to see if the services, with substantial assistance from Congress and DOD, can realistically develop the systems and operational concepts to support a deep attack strategy.

The Requirement

It has become quite evident that the term deep attack means different things to different people. The supporters of a deep attack strategy are fostering a wide variety of solutions to the problem. Within the defense establishment there arises the question of how to implement a deep attack strategy. It appears to be the only unique conventional military option around which the Warsaw Pact is to be countered. Given the rhetoric and responses of the administration over the past two years, it is clear that we are under pressure to

provide the mechanisms that will make deep attack a reality in as short a time as possible. In order for the services to respond properly, we must begin the process at the beginning. Implicit in the concept of deep attack is the premise that we are to attack something in order to be successful. It is essential to our process that we understand, with reasonable certainty, exactly what it is that has to be attacked. Therefore, the key to the establishment of a requirement to support deep attack is to understand what constitutes success. We must determine those critical elements of the enemy's force that have to be destroyed or significantly disrupted if we expect deep attack to succeed. For simplicity, I will refer to these critical elements as targets. It is simply not adequate to establish the requirement by referring to second echelon or follow-on forces as targets. Many supporters of the concept believe that they understand deep attack and respond by stating that there are many enemy targets to be struck at extended ranges. True, but the real question is which ones are critical and at what moment? Others, such as DOD, are pursuing deep attack of enemy armored formations with precision-guided munitions taking out small numbers of individual tanks or trucks such as was marginally demonstrated in the Assault Breaker Concept Demonstration Firings. No one has yet answered the question of whether these tanks or other individual targets at 60 to 150 kilometers from the Forward Line Of Troops (FLOT) are critical targets. My point here is simply that the services must decide upon and agree which targets are critical to successful prosecution of deep attack. We can neither design or hope to afford a system that attacks everything. Perhaps the CINCs should

also provide input as to what they have determined to be their critical targets. There are a wide variety of targets to consider such as maneuver forces, command and control centers, logistics support elements, air defense warning and command nodes, command posts, airfields, etc. These targets must be selected and further defined for proper hardware system design. The design of a deep attack system is primarily dependent upon the determination of the target structure to be attacked, the timeliness of the attack, and the degree of damage required. Once this determination was made, it would provide the basis for the requirements of the target acquisition and attack mechanisms of a deep attack system. The services need a consensus as to which targets are to be attacked, when they must be attacked, and who should attack them. Without this concensus, it will be difficult to proceed with individual service weapons development programs. While it is understandable that each service would place different priorities on targets that are seen as most threatening to them at any given point in time, the final objective of winning the war must never be forgotten. If we were to win the air war and lose the land battle, would it make a difference to the final outcome? AirLand Battle can never become reality without a joint agreement by the services on the battlefield requirements and on the operation of a deep attack system. Although the Army and Air Force have agreed in principle on AirLand doctrine, the basic requirements for a deep attack system remain unspecified at this time. Vital parameters such as range, payload, warhead options, guidance, and target defeat criteria are not yet available.

In our search for appropriate second echelon targets, many continue to focus on one of the predominant Warsaw Pact battlefield weapons, namely the tank. Simple logic reveals that tanks, or other current weapons such as aircraft, do not fulfill their threat potential until they are in position to use their on-board weapons. At present, this limits tanks to approximately a three (3) kilometer arc in front of their main guns. Is there truly significant value in attacking these vehicles at depths approaching 150 kilometers? Is not the burden on the enemy to support, repair, and direct these tanks until they are in a position on the battlefield where they can influence the battle? Basic optimization techniques would call for the destruction of enemy tanks just at that point prior to where they would become effective on the battlefield. This would be extremely demoralizing to an enemy. Our fixation in the Army with anything that kills tanks has apparently led to the multitude of FLOT weapons that are all focused on the anti-armor role. Even with the arrival of COPPERHEAD and HELLFIRE, we still do not have an over-the-hill capability to take out enemy armor. The heavy concentration of anti-armor weapons in our programmed force is perhaps a reflection of our current inability to kill armor at ranges beyond visual detection and an attempt to prevent armor breakthrough. There apparently exists a belief that the destruction of the enemy armor is absolutely essential even to the exclusion of many critical non-armor targets. We pay a significant price by calling for the capability of defeating the hardest targets on the battlefield by almost every new weapon. The enemy tank imparts little, if anything, to the significant chemical

and ballistic missile capabilities of the Warsaw Pact. As one sent Army official recently remarked. "If it can't kill tanks, it should be funded." If in fact then, the determination is made that armor, and in particular second echelon armor, is indeed the priority tark at what range is it best attacked? Current thinking would place th attack range at somewhere between 5 to 150 kilometers forward of the FLOT (FOFLOT). Where then lies the optimum range for our deep atta system? This question can be answered through intelligent analysis the European battlefield, Soviet doctrine and tactics, threat weaps liabilities, and a realistic appraisal of those target acquisition capabilities that will or can be made available during the proposed life cycle of our deep attack system. Range is, and has been, one the most controversial aspects of deep attack, not only within the Army, but between the Army and the Air Force. This is probably so because neither the Air Force nor the Army has been able to settle exactly what it is that we want to attack and where it is when it becomes critical to warfighting. It is entirely possible that the wrong assessment of the target set or the establishment of an unrealistic requirement could make a deep attack system either unaffordable, ineffective, or both. There is a correct answer to the range question, but we have not yet found it or the rationale which supports it. We simply have not yet answered the question, "How de is deep?".

Once the baseline requirements for a deep attack system have I established, the process of designing the target acquisition and attack mechanisms can begin. The design process will establish a

baseline system that should achieve the required effects in a variety of likely scenarios. An outcome of the design effort is the specification of the minimum number of systems required to satisfy the baseline. At this point, initial estimates of total systems cost and effectiveness could be postulated. Assuming that all ancillary costs such as C³ and force structure were included, an appropriate cost versus operational effectiveness analysis (COEA) would then be completed. Since neither requirements, system design, nor COEA have been completed to date, no true picture of the value of a deep attack system is available. Despite the fact that we have yet to determine what the true costs of doing deep attack business will be and whether its effectiveness is acceptable, a constituency has formed to support execution of the concept. It is still too early in the process to leap into an undefined deep attack requirement. There are many pieces to this puzzle that are not yet available, yet early initial operational capabilities (IOC) are being dictated that would be impossible to meet even if all the solutions were in hand. Before pursuing promising technology, hardware and IOC dates, the basic requirement for deep attack should be established and validated.

TECHNOLOGY

The critical element of deep attack will be the conversion of some of the most complex technologies into an operational deep attack weapons system. The whole concept of deep attack depends upon technology to such a large extent that should technology fail to live up to its claims, or the costs of producing it become prohibitively

expensive, deep strike will never be able to fulfill its promise for the AirLand Battle. There is a substantial assortment of technology programs that are competing for consideration. These programs are found in both civilian industry and government labs, are all at various stages of development, and are being constantly pursued or displaced by the latest "breakthroughs". None of these technologies is currently ready for production; many of them exist only on a theoretical plane, and most still require significant development and testing before any assurance can be given that they qualify as potential candidates. The technological requirements for deep attack will likely include advanced sensors, guidance, very high speed data processing, "smart warheads" or precision guided munitions (PGM) techniques, secure data transmission, radar area correlation, accurate target identification and discrimination, advanced warhead and kill mechanism techniques, propulsion technology and inherent survivability designs. The list goes on at great length and is continually growing. The recent Assault Breaker Program demonstrations which were sponsored by the Defense Advanced Research Projects Agency (DARPA) sought to successfully demonstrate technological solutions to attack of secondechelon forces. Whether or not the Assault Breaker Program successfully demonstrated the capability of technology to perform such a mission is a subject of great debate. What can be said with certainty about the Assault Breaker program is that it cost one-half billion dollars and that it did not test the concept of deep strike. If the purported results of the substantial investment in Assault Breaker are

any indication of where technology lies in its ability to strike deep effectively, we have yet to travel a very long road. Unfortunately, DOD and certain other supporters of Assault Breaker would have the services enter that program directly into production, essentially as demonstrated. Assault Breaker is not the simple answer to deep strike that the services require. While there are undoubtedly some significant technologies and lessons learned that can be applied to future solutions, it would be indeed foolhardy for the services to accept Assault Breaker demonstration hardware and push it toward production. Many proponents have some facet of technology that they would like to sell today but until the services can define their requirements adequately, full scale development of specific technologies is not practical. Proponents of deep attack place great stock in their reliance on technology to deliver, on time and as promised, an extremely complex solution. Most of the related technologies are as of now unproven. Those who would place such strong reliance in technology largely ignore the recent past where the technological solutions that promised so much in Vietnam, and more recently in places such as the Falklands, failed to fulfill those promises. The Army has its hands full at present with current technology being fielded as weapons. The experiences with PATRIOT, COPPERHEAD, ROLAND, VIPER, DRAGON, and many others have shown us that technology does not come quickly, at low cost, nor is it integrated easily into the force. The programs have also shown that seldom have they proven to be the panacea that initiated and sustained them through development, test, and fielding. The Army is only now beginning to feel the impact that technology has

wrought as we experience the "bow wave" of a multitude of modernized systems. Our greatest challenge in the technology arena will be in the selection of the appropriate solutions and their integration into a battlefield system that works, can be operated by our soldiers and does not drain the budget or our manpower pool as it comes into the inventory.

COSTS

There have been claims made that would lead many to believe that conventional deep attack will not be as demanding on the budget as most other alternative options. Unfortunately, no alternatives to deep attack have been proposed or costed to date. Conventional battlefield solutions used to be relatively less costly to pursue when compared to nuclear solutions. The reverse is true today and that reversal continues to widen the gap between conventional and nuclear options. A simple examination of the potential costs of a deep attack solution yields some interesting results. First, there is absolutely no evidence that any cost savings would result from the adoption of a deep attack strategy. A simple, generic comparison of a minimum number of targets which are likely to require engagement by Army forces would establish a basic inventory of approximately 5,000 missiles. This number was supported by the Army during its initial estimates. The target acquisition system (currently known as the Joint Surveillance Target and Attack Radar System or JSTARS), a C³ architecture (to integrate the intelligence gathering, target selection and fire control process) and a very substantial research and development

effort in all areas must be added to the acquisition costs of our deep attack weapons system. Even though 5,000 missiles for engagement have been estimated, the requirement will likely grow to a number substantially higher than that after simulations are completed which take into account reliability, survivability, penetrability, etc. The point here is that even desktop calculations show we will be generating a very substantial claim on the Army budget in order to pursue deep attack. Research and development costs will surely surpass one billion dollars and procurement, will run between 6 and 15 billion dollars depending upon the complexity of the system chosen. Almost everything that will be required to execute such a system does not exist within Army resources today. Although the Army portion of JSTARS has planned to use the existing MOHAWK airframe and the Joint Tactical Missile System (JTACMS) has planned to use the current LANCE missile system force structure, these constitute only a very small percentage of the total system costs. A truly deep attack system (beyond approximately 100 kilometers) will make for a very expensive system. Range will be a significant, but not the most significant, cost driver. Two major resource constraints must be noted. First, there is no separate allocation of defense money for the pursuit of deep attack. Deep attack will compete for funding alongside every other program in the Army budget and every program in the defense budget. It will either be viewed as cost effective (hopefully after the evidence is in) or not. It will compete with every Army program that is part of the FEBA defense. The Army has often stated that a major shift of funds into deep attack should not be allowed to

significantly dilute the FEBA defense, for to do so would insure failure of AirLand doctrine. Without an effective FEBA defense, there would be little reason to execute deep attack. The Army and Air Force must walk a very tight line in deciding on where best to place their funds. A decision to pursue deep attack cannot be made lightly. If deep attack is pursued, the selection of the right system to do the job is critical, since there are no "extra" funds to pay for these decisions. The second major resource constraint is manpower. Since the Army has capped manpower at 780,000 at least for the next five years, we must be sure that any investment in deep attack considers very carefully the manpower demands that will surely be created. It is highly un-likely that the LANCE force structure levels will be sufficient to allow fielding of an adequate system. Sufficient manpower trade-offs will have to be found to pay for deep attack manpower costs. LANCE simply was structured for a different and less-demanding mission. The demands for resources will be high to cover any move into deep attack. A caution is also in order that Congress and DOD not be oversold on a deep attack strategy lest they be tempted to further dilute our current research, development and acquisition programs to pay the bill. Neither proponents or detractors have yet shown that investment of equal resources in support of the close-in battle will not be more cost-effective.

Conclusions

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While deep attack may make imminent sense in the long run as a logical strategy, a disastrous error could be made if the services

were to rush headlong into development programs without carefully examining some fundamental concerns. Although this essay was by no means intended to portray the full spectrum of issues confronting the deep attack option, it does raise some specific concerns that should be more adequately addressed. There is no doubt that much of the emerging technology in this area can potentially become useful in a military sense, however, it may not yield the leverage that deep attack currently promises. It appears that deep strike at present consists of a great variety of technological efforts (in various stages of development), operational concepts, and doctrinal proclamations that in many cases seem totally unrelated. It is a burden left up to the services to answer the hard questions we now face and to bring the big picture into focus. Only the services can provide adequate responses to these questions since they will be the ones who have to live with the results, pay the eventual price of these systems and, perhaps, fight the next war with them. We are not replacing an older weapons system on the battlefield with a newer version. We are moving into uncharted territory and looking at critical methods of fighting the AirLand Battle. AirLand Battle has been decreed as the new centerpiece doctrine and it is time for new approaches, honest evaluations and true joint service cooperation. If the services were to meet this challenge head-on and formulate a strong joint position, it is difficult to see either DOD or the Congress moving it in another direction. Since deep attack has only been loosely defined to date, it will eventually become whatever the services decide to make of it. However, if the services cannot agree, there is little doubt that help from "above" will soon follow. The missing pieces of the deep attack puzzle need to be identified, studied and placed into their respective positions on the game board. Only after the requirement is established can the hard analysis and appraisals of the true worth of deep attack be debated. Once the constraints are evaluated and applied the picture will clear considerably and the decision as to whether deep attack is possible, affordable and executable will be made much simpler. If there is to be no consensus amongst the services, they will surely have been divided in the pursuit of deep attack. It is unlikely that the individual services will be able to field the most effective battlefield systems, if any at all, by pursuing their own courses of action.

If all of our analysis and assumptions of Soviet offensive doctrine is correct, to include the echelonment of their forces, we are indeed on the right track with AirLand Battle, and more specifically, with our call for deep attack. Deep attack appears to be a fundamentally sound and logical element of current doctrine but the successful transition from doctrine to battlefield system requires that several significant steps be accomplished. Until these steps are satisfactorily completed, it is impossible to state with any certainty whether or not the services will ever realize the capability to successfully execute deep attack. The Army and Air Force have been criticized by DOD and Congress for not proceeding more quickly on the development of deep attack hardware. Until the requirements are firmly established, total system costs and effectiveness are evaluated, and the services have a firm grasp on what is required of

them, both operationally and monetarily, they should <u>not</u> charge ahead with the building of any system. At times in the past, the services have invested in weak or transitory requirements and wound up with expensive fielded systems that demonstrated marginal military utility. This is one time when the services should be absolutely certain that doctrine can be positively supported. It is certainly not a given that deep attack can be made either affordable or effective at this time. It remains to be seen whether the theater and perhaps the corps commander will ever be able to execute this aspect of current doctrine. If deep attack does not materialize from current and planned programs, current doctrine will surely have to be revised, although the alternatives are by no means clear at this time.

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